Assignment-3

DATE : 11-06-2021

OOPs using C++

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Ans 1. Write a statement that will create an Object called fob for writing, and associate with a file name DATA

```
#include <iostream>
#include <fstream>
using namespace std;
#include <cstdlib>
int main()
{
    ofstream fob;
    fob.open("DATA");
    return 0;
}
```

```
ofstream fob;
fob.open("DATA");
```

Ans 2. Describe how would you determine number of objects in a file. Where do you need such information?

Ans

```
#include<iostream>
#include<stdlib>
#include<fstream>
using namespace std;
int main() {
    ifstream fin("read.txt");
    char ch;
```

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```
if (i >63 && i<91) || (i >96 && i<123)
    C++;
else
    if (ch=='')  sp++;
}
Cout << "\n No. of characters in file: " << c;
Cout << "\n Space b/w words" << sp;
return 0;
}
```

We can also find the ~~the~~ objects created by static member functions

[We can require the same for finding the word frequency or analyzing stop words]

Finding number of objects in a file can be done

Ques3. Distinguish between the terms class template and template class.

TEMPLATE CLASS

A class that has generic definition or a class with parameters which is not instantiated until the information is provided by the client. It is referred to a jargon for plain templates.

CLASS TEMPLATE

The individual construction of a class is specified by a class with parameters which is almost similar the way individual objects are constructed by using a class. It is referred to a

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Jargon for plain class

Ques 4. Write a function template for finding the minimum value in contained in an array

Ans

```
#include <iostream>
T findMin (T arr[], int n)
{
    T min;
    min = arr[0];
    for (int i=0; i<n; i++)
    {
        if (min > arr[i])
        min = arr[i];
    }
    return min;
}
int main()
{
    int arr[5];
    cout << "Enter 5 values of the array" << endl;
    for (int i=0; i<5; i++) {
        cin >> arr[i];
    }
    Cout << "Smallest value in the array
    is" << endl;
    Cout << findMin (arr, 5) << endl;
    return 0;
}
```

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Ans 5. Explain under what circumstances the following statement would be used in :

a) Throw ; → Re throwing exception
A program throw an exception when a problem shows up. This done is using a throw keyword
This can be thrown in any code block
The operand of throw statement determines type for exception and can be any expression and the type of the result of the expression determines the type of exception thrown.

b) void func1 (float x) throw ()
↓
This state is used to prevent a function from throwing any exception

c) catch (...)
used to catch all types of exception

Ans 6. Compare the performance characteristics of the three sequence container :

Ans There are 5 sequence containers in cpp
→ array
→ vector } implemented using array DS (Static)
→ deque
→ forward list } implemented using linked list DS (dynamic)
→ list

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Ques 7. How does string type string differ from a C-type string?

Ans C- strings are simply implemented as char array which is terminated by a null character (0) String was born in C++ as.
CS string is inherited from C
Strings are born in C++ and defines the std::string class along with its non-member function.

Ques 8. When do we use multiple catch handlers?

Ans Multiple catch blocks are used when we have to catch a specific type of exception out of many possible type of exceptions. i.e. an exception of type char or int or short or long etc.